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Thus, the present invention is based on a task of manufacturing a treatment apparatus for guaranteeing a low–pollution treatment in an economically viable manner.

This task is fulfilled by which, according to the present invention, liquid flows in a crushing chamber that is supplied with a material to be treated and has a means capable of separating a foaming agent and/or a coolant, this liquid flow is discharged from the crushing chamber and then

sent via a pipe to at least one cooling stage, where the foaming agent and/or the coolant are condensed and can be separated.

The apparatus according to the present invention can not only treat materials containing FCKW in a low–pollution manner, but also collect FCKW that is pourable in a container after condensation and then recyclable afterwards. Foamed materials also are recyclable for manufacturing, for example, light–weight building blocks after being separated from FCKW.

A special application field of the present invention is the one of treatment of a cooling device. Since a coolant contained in a cell of a closed–celled insulator has a high insulation, a considerable cost is involved when no foaming agent containing FCKW is used. In the case of general household refrigerators, the FCKW amount in a circulating passage of the coolant is only one third of FCKW contained in the insulator.

After passing a cooler stage, the liquid flow is sent via a return pipe to the crushing chamber, making it possible to perform a particularly economical circulating operation.

If, after passing through a filter device, a slight part of the liquid flow deviates from the return pipe and is discharged in the air, it is possible to generate low pressure in the crushing chamber. This low pressure ensures that FCKW does not escape from the crushing chamber. The filter device is designed so that the discharged branch flow has no FCKW at all.

Since, after passing the cooling stage, the liquid flow is led to a heater, it is advantageous that the liquid flow that has been heated again is sent through the return pipe to the crushing chamber, then absorbs the separated FCKW in the crushing chamber, and can be conveyed to the cooler stage again. In this case, it is particularly economical that the heat absorbed in the cooling stage is utilized for heating the heater.

In order to guarantee a continuous operation of the treatment apparatus, it is advantageous that the filter device includes two activated carbon filters, the foaming agent and/or the coolant are treated and the foaming agent and/or the coolant are discharged alternately by this

activated carbon. In this case, it is particularly convenient that the treatment by the activated carbon filter is carried out at substantially a temperature level of the last cooling stage by the branch flow of the liquid flow to be discharged in the air whereas a partial liquid flow (Fluidteilstrom) heated for being discharged from the activated carbon is led inside the activated carbon filter and then sent through the return pipe to the pipe between the crushing chamber and the cooling stage. By selecting various temperature levels, the optimal load efficiency and discharge efficiency of the activated carbon are given consideration.

In the case of a preferred example, as a means of separating FCKW, a crushing device, for example, a roller device or a smashing device is used in the crushing chamber. An additional safety against FCKW generated from the crushing chamber is achieved by an inlet of a material to be treated to the crushing chamber and outlets of materials that have been treated from the crushing chamber being protected by air lock devices. When the treatment apparatus is supplied with a combined material, for example, a metal having an open–celled insulator formed of a foam, the treatment apparatus that is assembled to be compact, in particular, separates the metal from the foam and/or the plastic that contain the metal in the crushing chamber.

The function and other advantageous characteristics of the present invention will be made clear by the following description of a preferred example with reference to a drawing.

For this purpose, the only drawing shows a crushing chamber 1, in which a crushing device 2 including a plurality of drivable rollers is provided. A material to be treated is conveyed through an inlet 3 to the crushing chamber 1 by a conveyer belt 4 and supplied to the crushing device 2. By a separating device, which is not shown in detail, a metal part is separated from a plastic part and a foam part and sent out through an outlet 5 from the crushing chamber. By the crushing device, the synthetic plastic and the foam are squashed flat and smashed to the extent that most of the components of FCKW are separated. The plastic and the foamed

material that have been crushed and compressed are sent out through an outlet 6 from the crushing chamber 1 by a conveyer belt 7. The inlet 3 and the outlets 5, 6 are protected by so–called air locks 8. The air locks 8 generate an air flow in a transverse direction with respect to inlet and outlet directions by a compressor.

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